



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,705	10/05/2006	Yukihiko Minamida	09852/0205611-US0	3025
7278	7590	05/28/2008		
DARBY & DARBY P.C. P.O. BOX 770 Church Street Station New York, NY 10008-0770			EXAMINER FRANK, NOAH S	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 05/28/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/599,705	<b>Applicant(s)</b> MINAMIDA ET AL.	
	<b>Examiner</b> NOAH FRANK	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US 6,221,978) when taken with DYNACOLL® polyester data from Degussa® and in view of Takahashi et al. (JP 5-51573).

Considering Claim 1: Li teaches a moisture curable, hot melt, polyurethane adhesive formed by a reaction between a polyisocyanate and polyols (6:14-16). Further, Li teaches the polyols to be: (A) – an aromatic/aliphatic polyester polyol (3:5-10), (B) – an aliphatic polyether polyol having a molecular weight between 1000 and 4000 (4:65-5:1), and (C) – an amorphous aromatic polyester polyol with the trade name DYNACOLL 7100® series having glass transition temperatures above 0°C (5:16-27).

Li does not teach the molecular weights and glass transition temperatures. However, polyester data shows the claimed  $T_g$  and molecular weight for the DYNACOLL 7100® series (Degussa polyester data, page 4).

Li does not teach the claimed long-chain aliphatic polyester polyol. However Takahashi et al. teaches moisture curable hot melt urethane adhesives comprising crystalline aliphatic polyester diol, prepared by reacting sebacic acid and 1,6-

Art Unit: 1796

hexanediol, and an aromatic polyester diol (Abs). The aliphatic polyester diol has a molecular weight of 500 to 5000 ( $n=2\sim 15$ ) (¶0011). Li and Takahashi are combinable because they are from the same field of endeavor, namely moisture curable hot melt polyurethane adhesives. At the time of the invention a person of ordinary skill in the art would have found it obvious to have replaced the aromatic/aliphatic polyester of Li with the crystalline aliphatic polyester, as taught by Takahashi, in order to improve the adhesion of the adhesive, caused by the combined use of the crystalline aliphatic polyester diol and the already present aromatic polyester diol (Abs of Takahashi).

Considering Claim 2: Li teaches an additional aromatic polyester polyol (CII) incorporated into the polyurethane designated a “crystalline” polyol having a molecular weight of 3500 (7:17-20) and a glass transition temperature of 0°C (4:23-24).

Considering Claim 3: Li teaches the aliphatic polyether polyol (B) of the composition is polypropylene glycol having a molecular weight of 3000 (7:8-9).

Considering Claim 6: Li teaches the composition of the polyurethane is as follows: the aliphatic/aromatic polyester polyol (A) is between 10 and 90 parts (3:45), the aliphatic polyether (B) is between 5 and 45 parts (5:13), and the aromatic polyester polyol (CI) is between 5 and 35 parts (5:31) all based on 100 parts of the polyurethane.

Considering Claim 7: Li teaches the composition of the aromatic polyester polyol (CI) is between 5 and 35 parts (5:31) and the additional aromatic polyester polyol (CII) is between 10 and 60 parts (4:53) all based on 100 parts of the polyurethane. Therefore sums of (CI) and (CII) will be between 10 and 35 parts per 100 parts of the composition. (i.e. 15 parts of (CI) and 15 parts of (CII) = 30 parts)

Considering Claim 8: An “island like phase separated structure” would be inherent to the composition as claimed. The Office recognizes that all of the claimed effects and physical properties are not positively stated by the reference. Note however, that the reference teaches all of the claimed ingredients, process steps and process conditions and thus, the claimed effects and physical properties would implicitly be achieved by carrying out the disclosed process. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

Considering Claim 9: Li teaches the viscosity range of the compositions at 121°C is between 7000 and 10,000 cps (Table II).

Considering Claim 10: Li bonding a sheet or strip of the polyurethane to a substrate (7:27-33).

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US 6,221,978) when taken with DYNACOLL® polyester data from Degussa® and in view of Takahashi et al. (JP 5-51573), as applied to claims 1-3 and 6-10 above, and further in view of Critchfield et al. (US 4,312,973).

Considering Claims 4-5: Li teaches the basic claimed composition as set forth above.

Li does not teach the endcapping of polypropylene glycol (B) with ethylene oxide. However, Critchfield teaches the incorporation of ethylene oxide into polypropylene polyols (1:46-49). Li and Critchfield are combinable because they are from the same field of endeavor, namely polyurethane elastomer synthesis. At the time of the invention a person of ordinary skill in the art would have found it obvious to have incorporated ethylene oxide, as taught by Critchfield, in the composition of Li, in order to optimize the reactivity of the polyol and to increase the solubility of the polyol.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NOAH FRANK whose telephone number is (571)270-3667. The examiner can normally be reached on M-F 9-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARK EASHOO/  
Supervisory Patent Examiner, Art Unit 1796  
25-May-08

NF  
5-12-08